Scrub-Jay Survey Guidelines (Updated 1/18/2005)

Adapted from: J.W. Fitzpatrick, G.E. Woolfenden and M.T. Kopeny. 1991. Ecology and development-related habitat requirements of the Florida scrub-jay (Aphelocoma coerulescens). Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program Technical Report No. 8. Tallahassee, FL. 49pp.

The most effective method for surveying a site for Florida scrub-jays is to traverse the area systematically, using a high quality tape recording of Florida scrub-jay territorial scolding in an attempt to attract the jays. The recording should include clear examples of all typical territorial scolds, including the female "hiccup" call. Vocalizations are available by contacting:

Library of Natural Sounds
159 Sapsucker Rd.
Ithaca, NY 14850
Email: libnatsounds@cornell.edu

http://birds.cornell.edu

Map plant communities either on a 7.5 foot U.S. Geological Survey (USGS) topographic map or an aerial photograph at a scale of no more than 400 feet per inch. The vegetation map must show all forms of existing development. On the vegetation map, establish parallel line transects with playback stations along each transect. Space the transects and playback stations so that all different scrub types will be sampled for jays (i.e., so that the taped calls will be effectively broadcast across areas of concern). These scrub types should include not only the more "classic" xeric oak scrub, scrubby pine flatwoods, scrubby coastal strand, and sand pine scrub, but should also include:

- -- pine-mesic oak
- -- xeric oak
- -- sand live oak
- -- improved, unimproved, and woodland pastures;
- -- citrus groves;
- -- rangeland;
- -- pine flat woods;
- -- longleaf pine xeric oak;
- -- sand pine;
- -- sand pine plantations;
- -- forest regeneration areas;
- -- sand other than beaches;
- -- disturbed rural land in transition without positive indicators of intended activity; and
- -- disturbed burned areas.

The presence of scrub oaks, no matter how sparsely distributed, is the key indicator of "scrub" habitat.

Distances between transects, and between stations along transects, depend on many factors, including power of the speaker used for broadcasting the calls, topography of the site, and the density of the surrounding vegetation. Adequate spacing between transects can be estimated roughly as the distance at which a person listening to the tape directly in front of the speaker perceives the "bird" to be no more than about 100 meters away. A distance of 100 to 200 meters between transects and between stations is generally adequate when using a good-quality, hand-held cassette player broadcasting at full volume.

Surveys should be carried out on calm, clear days about one hour after sunrise, and should terminate before midday heat or wind. Surveys should not be conducted in winds stronger than a moderate breeze (5-8 mph), in mist or fog, or in precipitation exceeding a light, intermittent drizzle. Heat and especially wind lowers the tendency for jays to respond to distant territorial scolds, and wind reduces the

distance over which recordings can be heard. Jays are also reluctant to fly on windy days regardless of hour or season.

Surveys may be conducted anytime between March 1 through October 31. However, Ideal survey periods include: 1) spring (especially March), 2) fall (September and October), when territorial displays are most frequent and vigorous, and 3) midsummer (July) when young of the year are independent but still distinguishable by plumage. The poorest times of the year to survey are late winter, when jays are most likely to fly far for food, and late spring when the young are quiet and the adults are occupied with molt and feeding fledglings.

Transects may be driven or walked. If driven, step out or stand atop the vehicle at each playback station. Broadcast the calls at each station for at least 1 minute in all four directions around the playback station, emphasizing any direction in which low-growing oak scrub is the predominant vegetation. On the vegetation map, plot the locations and indicate group size of all Florida scrub-jays where they are first seen or heard. Distinguish adult-plumaged jays from juvenile-plumaged jays whenever possible.

At localities with car trails, large areas of scrub can be surveyed with a vehicle in one day. On foot, the process is more laborious because of the relatively large size of territories (often 10 to 40 acres). Once a group is located, stop broadcasting at that station. Remaining at this station briefly should result in the assembly of the entire group. This allows one to estimate group size and, if done during the midsummer, to distinguish young of the year from adults.

Sometimes two or more groups will be attracted to one station, usually from different directions. Observers should be careful, therefore, to plot each group where it was first spotted or heard, not at the site to which the jays were attracted. In rare circumstances, especially at sites where numerous groups congregate at artificial food or water sources, it may be difficult to differentiate groups. This is especially true where jays have become habituated and tame to human approach. Again, in such cases careful observation is extremely important. Studies of such congregations using color-marked jays have confirmed that almost always they consist of members of different family groups. Often they may have crossed several territory boundaries to reach the neutral feeding or drinking areas. The result gives a false impression of extremely high jay density.

It is essential that the subject area be surveyed as often as necessary (for a minimum of 5 days) to establish an accurate count of jay groups and territorial boundaries. If more than 8 to 10 jays are encountered at a single playback station during a fall or spring survey period, the jays at this site should be monitored carefully over several visits and different times of day. Numbers will shift as groups arrive and depart. Often it is possible to watch where the jays come from or return to as a means of determining how many groups are represented. For determining territorial boundaries, it is essential that the surveyor be familiar with different types of behavior exhibited by scrub-jays. Territorial boundaries may be most accurately predicted through a combination of observing scrub-jays and listening for territorial behavior (in the case where several families of scrub-jays exist in contiguous habitat) or by including habitat suitable for occupation by scrub-jays within a territorial boundary (in the case where a family of scrub-jays is somewhat isolated from other groups). If a question exists as to how many groups of scrub-jays are onsite, or where to draw territorial boundaries, it is strongly recommended that the U.S. Fish and Wildlife Service receive permission from the land owner to conduct an independent survey onsite.

The key end products of this procedure are: 1) a complete count of all jay groups onsite; and 2) an approximate territory map or home range center for each group.

Provide the U.S. Fish and Wildlife Service with a final report that includes the following, as applicable:

A. An information sheet including:
   -- Dates and starting and ending times of all surveys conducted.
   -- Weather conditions during all surveys, including average temperature, wind speed and direction, visibility, and precipitation.
   -- Total number of jay groups found, number of jays in each group and number of juvenile-plumaged jays in each of these groups.

B. An aerial photograph or vegetation map depicting:
   -- The entire area of interest.
   -- Transect lines and playback stations.
   -- Locations of all jays seen or heard while conducting the survey or at any other time, including flight direction.
   -- Approximate suspected territory boundaries between jay groups or suspected home range centers for each group.

Mail final reports to:
Scrub-Jay Survey
U.S. Fish and Wildlife Service
6620 Southpoint Dr. South, Suite 310
Jacksonville, FL 32216-0958

Call us at 904-232-2580, extension 121, or email us at erin_gawera@fws.gov